

CIRA Methodology and Biostatistics Seminar Series

“Mixed Methods: Theory and Practice”

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This presentation will include an overview of various approaches for designing *qualitative*, *quantitative*, and *mixed methods* research in the social sciences. I begin with a consideration of knowledge claims for all three approaches, and then address key elements at each stage of the research process as they relate to mixed methods in particular. Lastly, I present as a point of comparison an actual case study/research project in which mixed methods were used, discussing its particular strengths, challenges, successes and failures.



CIRA

Thursday, September 25th, 2003
2:15 - 3:45 - CIRA conference room
40 Temple Street, Suite 1B

Yale University **C**enter for **I**nterdisciplinary **R**esearch on **A**IDS



Defining mixed methods

- ❖ **Collecting and analyzing both quantitative and qualitative data in a single study**
 - Expand understanding from one method to another
 - Converge or confirm findings from different data sources
 - “mixing” might be within one study or among several studies in a program of inquiry
 - Integrating, synthesis, quantitative and qualitative methods, multimethod, multimethodology
 - Growth of interest in mixed methods research as expressed in books, journal articles, diverse disciplines, and funded projects (see handout)
 - Whole is greater than the sum of its parts

Knowledge Claims

"The theoretical position that a researcher holds about the nature of existence (ontology) and the philosophies of knowledge which he or she embraces (epistemology) are intricately related to the methods adopted in the pursuit of knowledge." (Findlay and Li 1999)

❖ Positivism/Post-positivism

- determinism, probable determinism, reductionism, objectivity, scientific method, deductive, numeric measurement, validity, reliability, testing theories
- careful observation and measurement of the objective reality that exists "out there"

❖ Constructivism

- context or setting, meaning-based, interpretation, subjectivity, inductive, patterns, positionality, process, interaction, multi-vocality, negotiation, theory development
- knowledge is socially constructed

Frameworks that can support a mixed method approach:

❖ Advocacy/Participatory

- action agenda, reform or change, social justice, collaboration, recursivity, empowerment, political debate
- knowledge building should be a collaborative process with an emancipatory outcome

❖ Pragmatism

- practical solutions, problem over method, pluralistic approach, freedom of choice, truth is what works at the time, reflexivity, theory is political
- knowledge claims arise out of actions, situations, and consequences rather than antecedent conditions

❖ Structuration Theory

- examines the recursive relationship between knowing and capable human beings (agents) and wider social structures and systems; requires methods that are cable of considering agency AND structure and their constant interaction (Giddens 1989; Findlay and Li 1999)
- does not see mixing methods as a research luxury added if the researcher has time, but as central to research that seeks to examine the middle ground where structure and agency meet; more than eclectic pragmatism, driven by theoretical aims

❖ Realism

- causal powers are only realized in observable events under contingent conditions' requires intensive methods in offering causal accounts of how processes work, and extensive methods in illustrative the representative or generalizable dimensions of certain processes (Sayer 1992)

❖ Postmodernism as Method

- multiple methods as a means of implementing a relativist stance and allowing other voices to be heard (Dear 1995)

Inductive Logic and the Qualitative Approach

Generalizations and/or Theories, Past Experiences and Literature



Researcher Looks for Broad Patterns, Generalizations, or Theories from Themes or Categories



Researcher Analyzes Data to Form Themes or Categories



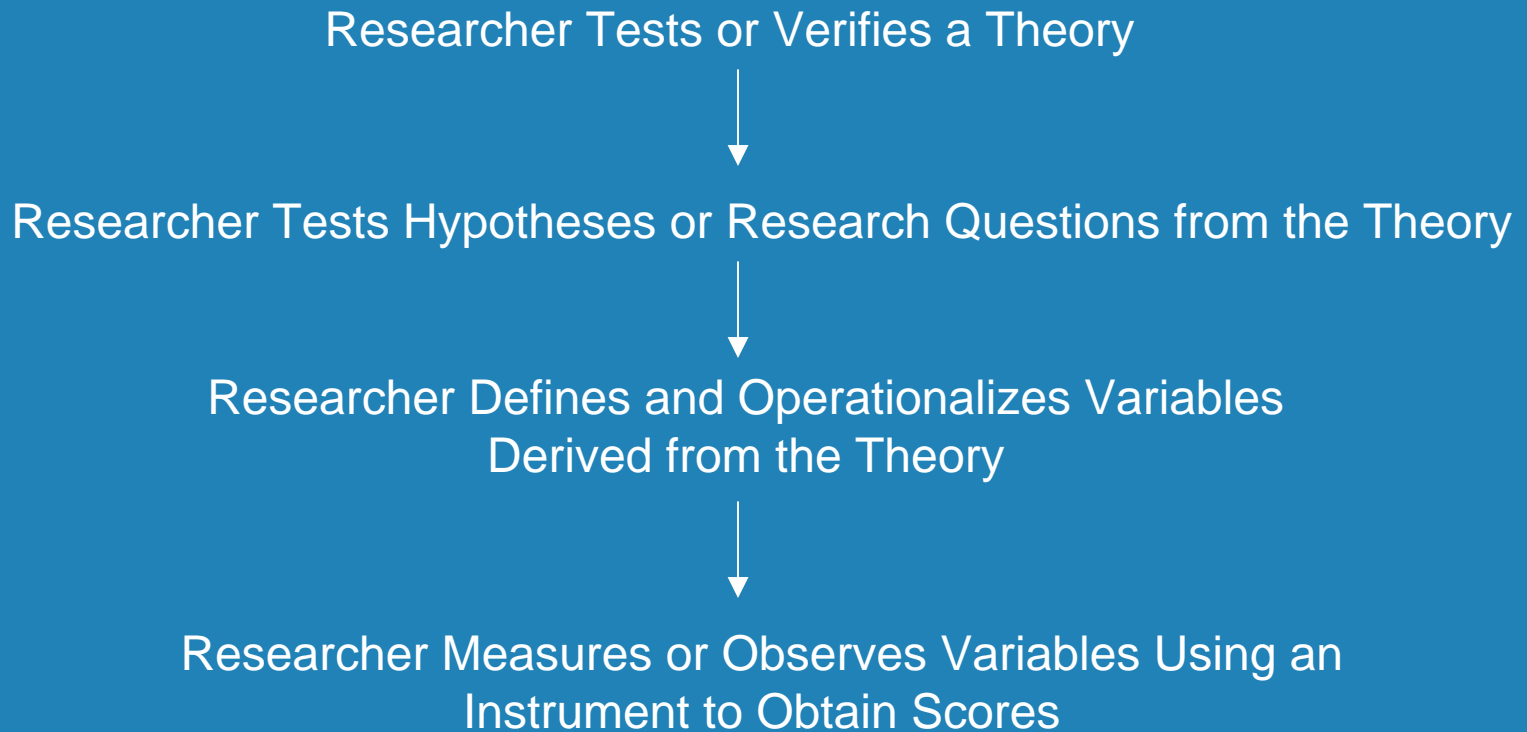
Researcher Asks Open-Ended Questions of Participants and/or Records Fieldnotes



Researcher Gathers Information (e.g. interviews, observations)

(Creswell 2003)

Deductive Logic and the Quantitative Approach



(Creswell 2003)

Choosing a Mixed Method Strategy

❖ Implementation

- sequential
- concurrent

❖ Priority/Weight

- Equal or skewed?

❖ Staged Integration

- Data collection stage (combining open-ended questions on a survey with closed-ended questions)
- Data analysis/interpretation stage (transforming themes/codes into numbers)

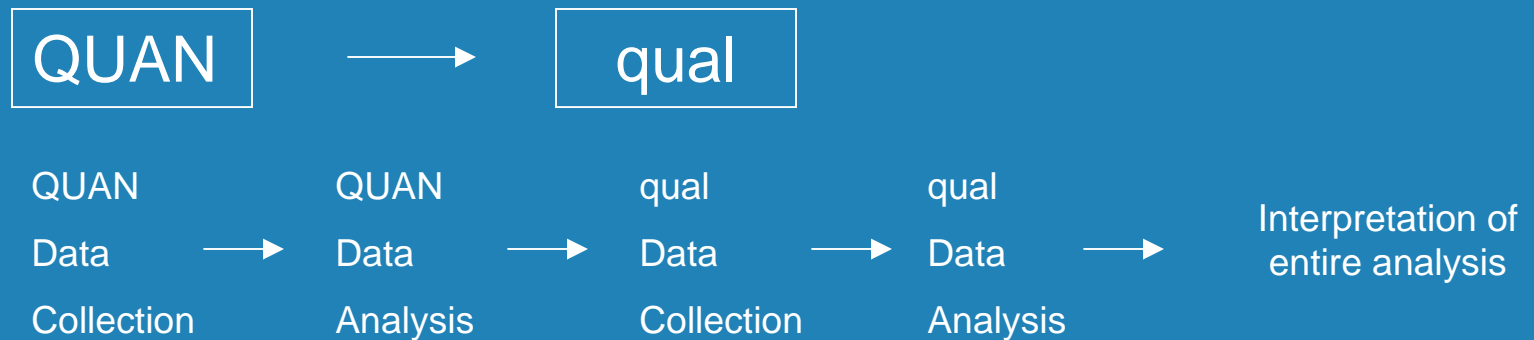
Sequential Exploratory Design



- ❖ Quantitative data/results assist in the interpretation of qualitative findings
- ❖ Primary focus is to explore a phenomenon
 - Testing elements of emergent theory
 - Generalizing qualitative findings to different samples
 - Determining distribution of a phenomenon within a chosen population
 - Developing and/or testing an instrument

(Creswell 2003)

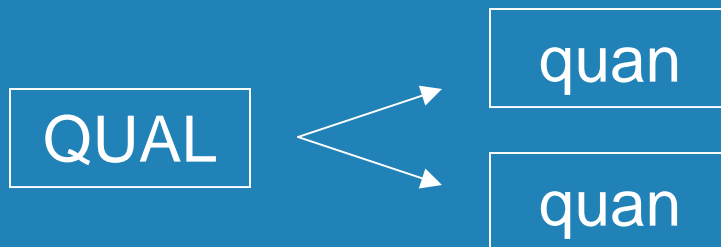
Sequential Explanatory Design



- ❖ Qualitative data/results assist in the interpretation of quantitative findings
- ❖ Primary focus is to explain a phenomenon
 - can assist in exploring certain results in more detail
 - can assist in explaining and interpreting unexpected results

Extended Integration

❖ Three (or more) part sequences



❖ Project overlap





Sequential Strategies

❖ Strengths

- Relatively straightforward (clear, distinct stages)
- Easier to describe and report than concurrent strategies

❖ Weakness

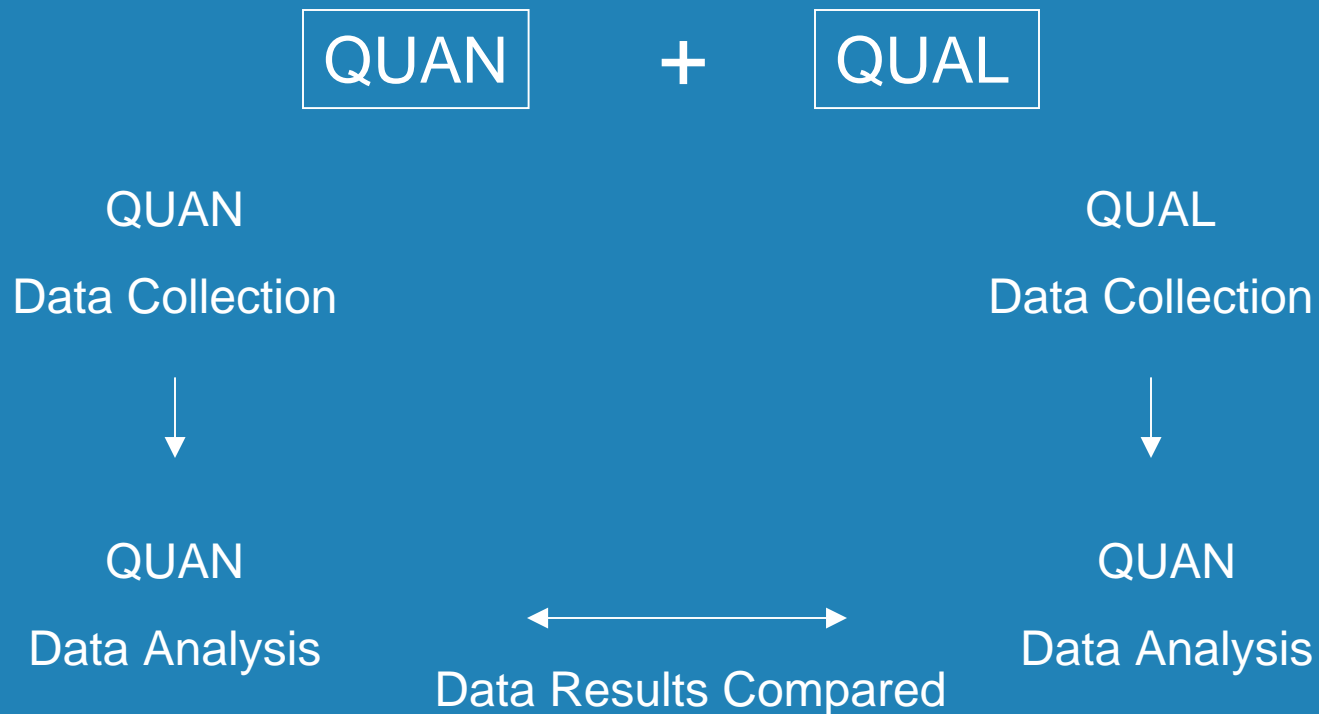
- Length of time involved in data collection, especially if all phases are given equal priority



Concurrent Strategies

- ✓ **Concurrent Triangulation Strategy**
- ✓ **Concurrent Nested Strategy**

Concurrent Triangulation Strategy



(Creswell 2003)



Concurrent Triangulation Strategy

- ❖ Primary purpose is to confirm, cross-validate, or corroborate findings within a single study
- ❖ Uses separate methods as a means to offset the weaknesses inherent within one method with the strengths of the other method
- ❖ Interpretation can note convergence or the findings as a way to strengthen knowledge claims or explain any lack of convergence

Concurrent Triangulation Strategy

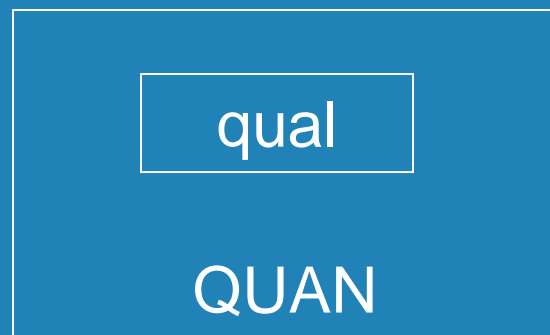
❖ Strengths

- ❖ More familiar
- ❖ Shorter data collection time period as compared with sequencing

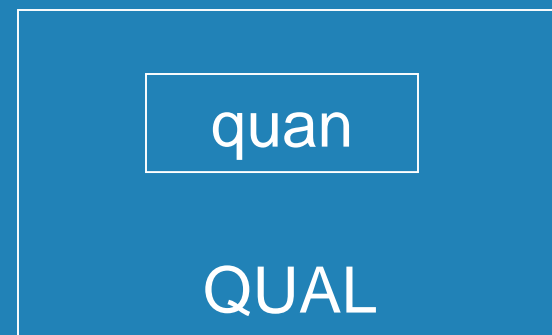
❖ Weaknesses

- ❖ Great effort and expertise to study adequately
- ❖ Can be difficult to compare the results of two analyses using data of different forms
- ❖ May be unclear how to resolve discrepancies that arise in the results

Concurrent Nested Strategy



Analysis of Findings



Analysis of Findings

Concurrent Nested Strategy

- ❖ Primary purpose is to gain broader perspectives than would be achieved by using the predominant method alone
- ❖ Embedded method (which is given less priority) addresses a different question than the dominant method or seeks information from different groups or levels



Concurrent Nested Strategies

❖ Strengths

- can be done simultaneously
- provides advantages of both methods
- can be used to gain perspectives from different types of data or from different levels within the study

❖ Weaknesses

- data need to be transformed so that they can be integrated
- may not be clear how to resolve discrepancies that occur between the two types of data
- differing levels of priority within the research design results in unequal evidence and may prejudice results

Data Analysis

✓ *within* the quantitative approach

- ❖ Descriptive and inferential numeric analysis

✓ *within* the qualitative approach

- ❖ Descriptive and thematic text or image analysis

✓ *between* the two approaches

- ❖ Data transformation, exploring outliers, instrument development, examining multiple levels

Data Analysis BETWEEN methods

❖ Data transformation

- Quantifying qualitative data (counting lines, sentences, etc.)
- Qualifying quantitative data (comparing factors from a scale with thematic description)

❖ Exploring outliers (sequential)

- Qualitative follow-up to provide insight about why certain cases diverged from the sample

❖ Instrument development (sequential)

- narrative analysis to provide items and themes for scales to create a well-grounded survey instrument

❖ Examining multiple levels

- Conduct surveys to obtain group level data, and interview individuals to explore specific issues within those groups

(Creswell 2003)



General challenges of any mixed method approach

- ❖ **Need for extensive data collection**
- ❖ **Time-intensive analysis of both text and numeric data**
- ❖ **Requirement for the researcher to be familiar with both qualitative and quantitative forms of research, or to work in teams**

Example: Mixed Method Data Collection

QUAL
20 open-ended interviews with customers

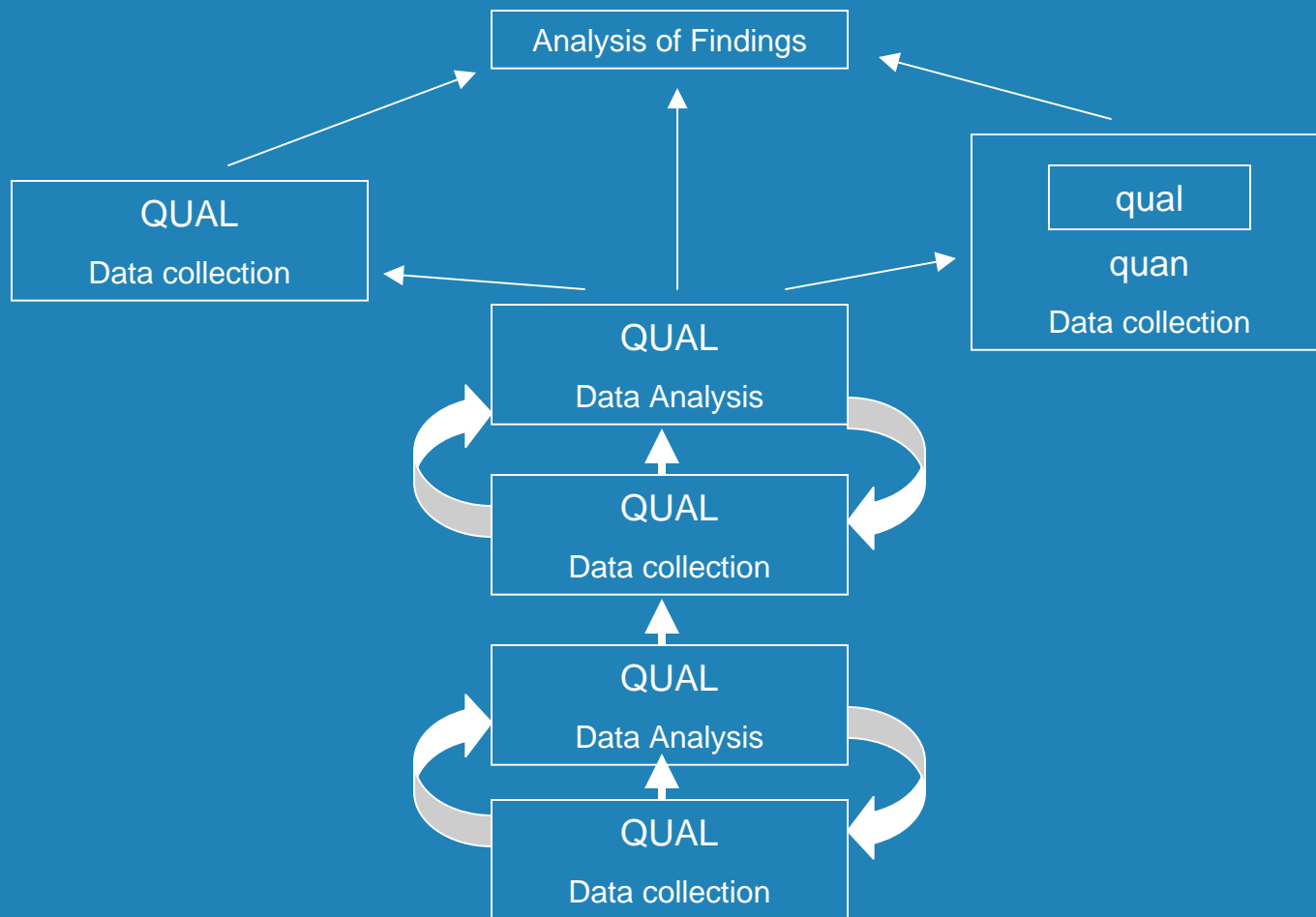
qual
5 open-ended survey items

quan
198 surveys with 100 closed items and
HIV tests/counseling with sex workers

QUAL
53 open-ended semi-structured interviews with sex workers

QUAL
Observations of sex workers and their customers at various sites
Participant observation with customers online (collecting, reading, responding to online discourse)
Informal interviews with health workers, city officials, scientists

Example: Mixed Method Data Analysis



Discussion Points

- What is the potential impact of the popularity and/or co-option of qualitative designs?
Barbour (2003):
 - 1) use of grounded theory as “an approving bumper sticker”
 - 2) a mechanistic overemphasis on fulfilling itemized checklists (technical essentialism)
 - 3) focusing on outcomes rather than process (constant comparative method)
- Does triangulation rely on the notion of a fixed point of reference? Does it imply a hierarchy in terms of the value of data generated from different sources? What are the procedures for dealing with conflicting results?
- What is the fate of well-designed single-method studies?
- Are both approaches fundamentally incompatible? (predetermined vs. emergent, compartmentalization, flexibility in design)
- Does anyone use grounded theory in its pure form anyway?
Barbour (2003): “We are unlikely to conceptualize a research question or to be able to formulate a research design that is fundable without explicit reference to existing bodies of knowledge and explicit or implicit reference to existing theoretical frameworks....We have some notion, even at the outset, of what our data are likely to look like and what we intend to do with it.”
- Postmodernism as method?
Findlay and Li (1999): adopting flexible research practices in order to capture both the multiplicities of meaning, and the recursive relationship between agency and structure
- Is some better than none?
- Turf Wars
- Collaborative Teams and Social Hierarchy

Selected Sources on Mixed Methods

- ✍ Barbour, Rosaline (2003). "The Newfound Credibility of Qualitative Research? Tales of Technical Essentialism and Co-option." *Qualitative Health Research*, Vol 13, No 7.
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